

## REMARKS

Claims 1-23 are pending in the application. Claims 1, 9, 17, and 21 are independent. By the foregoing Amendment, claims 1, 3, 9-10, 12, 17-19, and 22 have been amended and claim 2 has been canceled. The Specification has been amended. These changes are believed to introduce no new matter and their entry is respectfully requested.

### Rejection of Claims 3, 5, 10, 12, 14, 19-20, and 22 Under 35 U.S.C. §112, Second Paragraph

In the Office Action, the Examiner rejected claims 3, 5, 10, 12, 14, 19-20, and 22 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that the applicant regards as the invention. By the foregoing Amendment, Applicant have amended claims 3, 10, 12, 19, and 22 to accommodate the Examiner. Accordingly, Applicant respectfully request the Examiner reconsider and remove the rejection to claims 3, 5, 10, 12, 14, 19-20, and 22.

### Rejection of Claims 21-23 Under 35 U.S.C. §101

In the Office Action, the Examiner rejected claims 21-23 under 35 U.S.C. §101 as being directed to non-statutory subject matter. In particular, the Examiner states that the subject matter of claims 1-23 could be interpreted to include propagated signals. Applicant respectfully traverses the rejection. Nonetheless, in the interest of expediting prosecution, in the present paper, Applicant has amended the Specification to accommodate the Examiner. Accordingly, Applicant respectfully request the Examiner reconsider and remove the rejection to claims 21-23.

### Rejection of Claims 1-3, 8-12, 17-19, and 21-22 Under 35 U.S.C. §102(b)

In the Office Action, the Examiner rejected claims 1-3, 8-12, 17-19 and 21-22 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,953,520 to Mallick (hereinafter "*Mallick*"). Applicant respectfully traverses the rejection.

A claim is anticipated only if each and every element of the claim is found, either expressly or inherently, in a reference. (MPEP §2131 *citing Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628 (Fed. Cir. 1987)). The identical invention must be shown in as complete detail as is contained in the claim. *Id. citing Richardson v. Suzuki Motor Co.*, 868 F.2d

1226, 1236 (Fed. Cir. 1989)). The elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Independent claim 1 recites in pertinent part “receiving a virtual page number lookup request at a virtual Translation Lookaside Buffer (TLB), wherein the virtual TLB includes an instruction TLB and a data TLB; performing a lookup of the virtual page number in the virtual TLB, wherein performing the lookup of the virtual page number includes *performing the lookup of the virtual page number in the instruction TLB and the data TLB simultaneously*; and returning a physical page number corresponding to the virtual page number in the virtual TLB” (emphasis added). Independent claims 9, 17, and 21 recite similar language. Support for these changes can be found in original claim 2, now canceled. Thus no new search is required.

Applicant respectfully submits that *Mallick* fails to disclose “performing the lookup of the virtual page number in the instruction TLB and the data TLB simultaneously” as recited in claims 1, 9, 17, and 21. In the Office Action, the Examiner states that *Mallick* discloses a method comprising receiving a virtual page number lookup request at a virtual Translation Lookaside Buffer (TLB) (receiving logical addresses at MMUs 59 and 57), wherein the virtual TLB includes an instruction TLB and a data TLB (the combination of ILTB 59 and DLTB 57); performing a lookup of the virtual page number in the virtual TLB, wherein performing the lookup of the virtual page number includes; and returning a physical page number corresponding to the virtual page number in the virtual (if a MISS occurs, then an exception is taken and the page table is searched for the matching page table entry (PTE). With regard to claims 2, 9, 17, and 21, the Examiner states that *Mallick* at col. 12, lines 44-55, discloses performing the lookup of the virtual page number in the instruction TLB and the data TLB simultaneously. Applicant respectfully disagrees.

Applicant respectfully submits that col. 12, lines 44-55, and any other portion of *Mallick* fails to explicitly disclose what the Examiner asserts it does. There is no express mention in *Mallick* that the DTLB 57 and ITLB 59 are accessed simultaneously, at the same time, etc. No such language is present in *Mallick*. Applicant respectfully directs the Examiner’s attention to col. 13, lines 2-5 of *Mallick*, which discloses “If the required page table entry (PTE) is present in

the *relevant* one of DTLB 57 and ITLB 59, the physical address corresponding to the logical address is immediately available” (emphasis added). Thus, it is clear in *Mallick* that *either* DTLB 57 for data is accessed looking for the page table entry *or* ITLB 59 for instructions is accessed looking for the page table entry, *but not both simultaneously*.

If the Examiner is asserting that this element is inherent in *Mallick*, Applicant respectfully points out that to establish inherency, an Examiner must provide rationale or evidence tending to show inherency. MPEP §2112 IV. If relying on extrinsic evidence, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. (MPEP §2112IV citing *In re Oelrich*, 666 F.2d 578, 581-582 (CCPA 1981)). If relying on rationale, an Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the prior art (emphasis in original). (MPEP §2112IV citing *Ex parte Levy*, 17 USPQ.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)).

Applicant respectfully submits that it does not necessarily flow from *Mallick* that performing a lookup of a virtual page number in the DTLB 57 and ITLB 59 is done simultaneously. Col. 13, lines 2-5 of *Mallick*, which discloses “If the required page table entry (PTE) is present in the *relevant* one of DTLB 57 and ITLB 59, the physical address corresponding to the logical address is immediately available” (emphasis added), makes it clear that only the appropriate TLB is accessed. Thus it does not necessarily follow that *Mallick* performs the lookup of the virtual page number in the instruction TLB and the data TLB simultaneously.

Applicant respectfully submits that because *Mallick* fails to disclose “performing the lookup of the virtual page number in the instruction TLB and the data TLB simultaneously” as recited in claims 1, 9, 17, and 21, claims 1, 9, 17, and 21 are patentable over *Mallick*.

It must be noted that if a claim properly depends from a patentable claim, that claim also is patentable. (MPEP §2143.03 (citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir.

1988)). Claims 3 and 8 properly depend from claim 1 and are thus patentable for at least the same reasons that claim 1 is patentable. Claims 10-12 properly depend from claim 9 and are thus patentable for at least the same reasons that claim 9 is patentable. Claims 18-19 properly depend from claim 17 and are thus patentable for at least the same reasons that claim 17 is patentable. Claims 22-23 properly depend from claim 21 and are thus patentable for at least the same reasons that claim 21 is patentable. Claim 2 has been canceled rendering the rejection of it moot. Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claims 1-3, 8-12, 17-19, and 21-22.

Rejection of Claims 4-7, 13-16, 20, and 23 Under 35 U.S.C. §103(a)

In the Office Action, the Examiner rejected claims 4-7, 13-16, 20, and 23 under 35 U.S.C. §103(a) as being obvious over *Mallick* in view of U.S. Patent Publication No. 2007/0094476 to Augsburg et al. (hereinafter “*Augsburg*”). Applicant respectfully traverses the rejection.

Claims 4-7 properly depend from claim 1 and are thus patentable for at least the same reasons that claim 1 is patentable. (MPEP §2143.03 (citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988))). Claims 13-16 properly depend from claim 9 and are thus patentable for at least the same reasons that claim 9 is patentable. Claim 20 properly depends from claim 9 and is thus patentable for at least the same reasons that claim 9 is patentable. Claim 23 properly depends from claim 21 and is thus patentable for at least the same reasons that claim 21 is patentable. Accordingly, Applicant respectfully requests that the Examiner reconsider and remove the rejection to claims 4-7, 13-16, 20, and 23.

## CONCLUSION

Applicant respectfully submits that all grounds for rejection have been properly traversed, accommodated, or rendered moot and that the application is now in condition for allowance. The Examiner is invited to telephone the undersigned representative if the Examiner believes that an interview might be useful for any reason.

Respectfully submitted,

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I hereby certify that this correspondence is being submitted electronically via EFS Web on the date shown below.

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